

REPORT ON MACHINERY.

No. 23648

Port of Glasgow

No. in Survey held at Glasgow Irvine & Ayr
Reg. Book. S S Sheila
on the

Date first Survey 21st Aug 05 Last Survey 14th March 1906
(Number of Visits)

Received at London Office JUN 27 MAR 1906

Master _____ Built at Ayr By whom built Aika Shipbuilding Co (Ltd) Tons ^{Gross} _____ _{Net} _____ built 1906

Engines made at Irvine By whom made Renfrew Bros & Co when made 1906

Boilers made at Govan By whom made Amesbury Burnett & Co when made 1906

Registered Horse Power _____ Owners G. A. Smith Port belonging to Ayr

Nom. Horse Power as per Section 28 90 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted No

ENGINES, &c.—Description of Engines Compound Surface Condensing No. of Cylinders Two No. of Cranks Two

Dia. of Cylinders 18" x 40" Length of Stroke 27 Revs. per minute 90 Dia. of Screw shaft 8 1/2" Material of screw shaft Iron

Is the screw shaft fitted with a continuous liner the whole length of the stern tube Yes Is the after end of the liner made water tight in the propeller boss Yes If the liner is in more than one length are the joints burned ✓ If the liner does not fit tightly at the part between the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive ✓ If two liners are fitted, is the shaft lapped or protected between the liners _____

Dia. of Tunnel shaft as per rule Dia. of Crank shaft journals as per rule Dia. of Crank pin 8 1/4" Size of Crank webs 15 x 5 1/2" Dia. of thrust shaft under collars 8 1/4" Dia. of screw 9-6" Pitch of screw 12-6" No. of blades 4 State whether moveable No Total surface 34 sq. ft.

No. of Feed pumps 2 Diameter of ditto 2 1/2" Stroke 13 1/2" Can one be overhauled while the other is at work Yes

No. of Bilge pumps 2 Diameter of ditto 3" Stroke 13 1/2" Can one be overhauled while the other is at work Yes

No. of Donkey Engines One Sizes of Pumps 7 1/2 x 4 1/2 x 10 Duplex No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room Two 2" diameter In Holds, &c. Two 2" diameter

No. of bilge injections 1 sizes 4" Connected to condenser, or to circulating pump Yes Is a separate donkey suction fitted in Engine room & size Yes, 2 1/2"

Are all the bilge suction pipes fitted with roses Yes Are the roses in Engine room always accessible Yes Are the sluices on Engine room bulkheads always accessible ✓

Are all connections with the sea direct on the skin of the ship Yes Are they Valves or Cocks Both

Are they fixed sufficiently high on the ship's side to be seen without lifting the stowhold plates Yes Are the discharge pipes above or below the deep water line Above

Are they each fitted with a discharge valve always accessible on the plating of the vessel Yes Are the blow off cocks fitted with a spigot and brass covering plate Yes

What pipes are carried through the bunkers Peak & hold How are they protected Hard boxing

Are all pipes, cocks, valves, and pumps in connection with the machinery and all boiler mountings accessible at all times Yes

Are the bilge suction pipes, cocks, and valves arranged so as to prevent any communication between the sea and the bilges Yes

When were stern tube, propeller, screw shaft, and all connections examined in dry dock Before launch Is the screw shaft tunnel watertight None

Is it fitted with a watertight door ✓ worked from ✓

BOILERS, &c.—No. of Certificate 7750 (Letter for record S) Total Heating Surface of Boilers 1645 Is forced draft fitted No

No. and Description of Boilers One, Single Ended Working Pressure 130 lb Tested by hydraulic pressure to 260 lb

Date of test 24/2/06 Can each boiler be worked separately ✓ Area of fire grate in each boiler 53 No. and Description of safety valves to each boiler Two direct spring Area of each valve 7.07 sq. in. Pressure to which they are adjusted 135 lb Are they fitted with easing gear Yes

Smallest distance between boilers or uptakes and bunkers or woodwork 4-0" Mean dia. of boilers 13' 6" Length 10' 0" Material of shell plates Steel

Thickness 7/8" Range of tensile strength 28 to 32 tons Are they welded or flanged No Descrip. of riveting: cir. seams Double riv. long. seams Double riv. straps

Diameter of rivet holes in long. seams 1 1/8" Pitch of rivets 6" x 3" Lap of plates or width of butt straps 11 3/4" x 7/8" x 13/16" inside outside

Per centages of strength of longitudinal joint: rivets 84.4 Working pressure of shell by rules 131 lb Size of manhole in shell 12 x 16

Size of compensating ring No Nuts Flanged No. and Description of Furnaces in each boiler Three plain Material Steel Outside diameter 40"

Length of plain part 7 1/2" Thickness of plates 5/8" Description of longitudinal joint Welded No. of strengthening rings None at bottom

Working pressure of furnace by the rules 140 lb Combustion chamber plates: Material Steel Thickness: Sides 9/16" Back 9/16" Top 19/32" Bottom 9/16"

Pitch of stays to ditto: Sides 8 x 10 Back 8 1/2 x 9 Top 8 x 11 If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 135 lb

Material of stays Steel Diameter at smallest part 1.45" Area supported by each stay 88 sq. in. Working pressure by rules 131 lb End plates in steam space: Material Steel Thickness 1 1/16" Pitch of stays 10" x 20" How are stays secured Jack nuts (metal washers) Working pressure by rules 140 lb Material of stays Steel

Diameter at smallest part 5.26" Area supported by each stay 380 Working pressure by rules 138 lb Material of Front plates at bottom Steel

Thickness 3/4" Material of Lower back plate Steel Thickness 1 1/16" Greatest pitch of stays 12 1/2" Working pressure of plate by rules 130 lb

Diameter of tubes 3 1/4" Pitch of tubes 4 1/2" Material of tube plates Steel Thickness: Front 3/4" Back 23/32" Mean pitch of stays 11 1/2"

Pitch across wide water spaces 1 1/2" x 2 1/4" Working pressures by rules 146 lb Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 8" x 9 1/16" double Length as per rule 27 7/8" Distance apart 11" Number and pitch of Stays in each Two at 8"

Working pressure by rules 156 lb Superheater or Steam chest; how connected to boiler None Can the superheater be shut off and the boiler worked separately _____ Diameter _____ Length _____ Thickness of shell plates _____ Material _____ Description of longitudinal joint _____ Diam. of rivet holes _____ Pitch of rivets _____ Working pressure of shell by rules _____ Diameter of flue _____ Material of flue plates _____ Thickness _____

If stiffened with rings _____ Distance between rings _____ Working pressure by rules _____ End plates: Thickness _____ How stayed _____

Working pressure of end plates _____ Area of safety valves to superheater _____ Are they fitted with easing gear _____

WASS-0034

DONKEY BOILER— No. *None* Description *✓*

Made at _____ By whom made _____ Date of test _____ Where fixed _____

Working pressure tested by hydraulic pressure to _____ No. of Certificate _____ Fire grate area _____ Description of safety valves _____

No. of safety valves _____ Area of each _____ Pressure to which they are adjusted _____ If fitted with easing gear _____ If steam from main boilers can enter the donkey boiler _____

Dia. of donkey boiler _____ Length _____ Material of shell plates _____ Thickness _____ Range of tensile strength _____

Descrip. of riveting long. seams _____ Dia. of rivet holes _____ Whether punched or drilled _____ Pitch of rivets _____

Lap of plating _____ Per centage of strength of joint _____ Rivets _____ Thickness of shell crown plates _____ Radius of do. _____ No. of Stays to do. _____

Dia. of stays _____ Diameter of furnace Top _____ Bottom _____ Length of furnace _____ Thickness of furnace plates _____ Description of joint _____

Thickness of furnace crown plates _____ Stayed by _____ Working pressure of shell by rules _____

Working pressure of furnace by rules _____ Diameter of uptake _____ Thickness of uptake plates _____ Thickness of water tubes _____

SPARE GEAR. State the articles supplied: *Two top and two bottom end bolts & nuts, two main bearing bolts & nuts, one set of coupling bolts & nuts, one set of feed and bilge pump valves, one propeller, assorted bolts & nuts and a few bars iron, one set of air & circulating pump valves, one main & one donkey check valve*

The foregoing is a correct description, *Condenser tubes etc.*

Raymond B. H. C. R. M. Manufacturer.

Dates of Survey while building

During progress of work in shops - -	1905 Aug 21	Sep 7 19	Oct 9 23 29 28	Nov 2 10 16 24 29	Dec 4 6 11 12
	1906 Jan 4 8 11 16 26	Feb 8 12 20 21 26 28	Mar 2 8 14		
During erection on board vessel - -					
Total No. of visits	24				

Is the approved plan of main boiler forwarded herewith *Yes.*

General Remarks (State quality of workmanship, opinions as to class, &c.) *The machinery of this vessel has been built under special survey, the materials and workmanship are of good quality, it has been securely fitted on board and a full speed satisfactory trial run.*

The machinery of this vessel is now in our opinion eligible for record of $\frac{1}{2}$ h of C 3.06 (mixed) in register book.

Boiler plan & forging report attached.

It is submitted that this vessel is eligible for THE RECORD H.L.M.C. 3.06.

W.L.S.
28.3.06

The amount of Entry Fee... £ 13 : 13 :
Special ... £ 13 : 13 :
Donkey Boiler Fee ... £ : :
Travelling Expenses (if any) £ 2 : 17 :

When applied for, 26 MAR 1906 19
When received, 28.3.06

George Murdoch
Arthur L Jones
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute
Assigned + L.M.C. 3.06

Certificate (if required) to be sent to

